

Index.

BMW ORACLE Racing.	
Facts and figures.	2
BMW Oracle Racing 90.	
Wing sail data.	3
BOR 90 - Engineering at the Limit.	
The BMW ORACLE Racing Team supported by BMW EfficientDynamics	4
Interview Mike Drummond.	
The design director comments on the wing.	6
Trimming the Wing.	
Dirk de Ridder explains how his job has changed.	7
BMW ORACLE Racing.	
Design and construction team.	8
BMW ORACLE Racing.	
Sailing team.	33

For further information and press enquiries please contact:

BMW ORACLE Racing

Jane Eagleson
Director, Public Relations and Media
Tel.: +34-6202-80742
E-Mail: Jeagleson@bmworacleracing.com

BMW Sportkommunikation

Nicole Stempinsky
Tel.: +49 (0) 89-382 51 584
E-Mail: Nicole.Stempinsky@bmw.de

Websites:

www.bmworacleracing.com
www.bmor-photo.com

BMW ORACLE Racing. Facts and figures.

The team

The BMW ORACLE Racing team was founded by Larry Ellison in May, 2000, and is a professional sailing team tasked with the mission of winning the America's Cup. The team was a Louis Vuitton Cup finalist in 2003 and semi-finalist in 2007.

Now, as the Challenger of Record for the 33rd America's Cup, BMW ORACLE Racing, representing San Francisco's Golden Gate Yacht Club, is scheduled to race against the Defender, Alinghi, in February 2010. Both teams have built giant multihulls for the occasion.

With a deep and talented sailing team, BMW ORACLE Racing has a core crew based in San Diego, whose focus is the 33rd America's Cup. Other sailing team members compete on the RC 44 circuit, the MedCup, the match racing circuit, and now, in the Louis Vuitton Trophy.

The team has had three main bases of operation, in Anacortes, Washington, where its boatbuilding facilities are located; in San Diego, California, where the team has been preparing for the 33rd America's Cup; and in Valencia, where the team maintains facilities from the last event, and is planning to shift its operations ahead of the Match.

Key players

Team founder - Larry Ellison (USA)

CEO - Russell Coutts (NZL)

Helmsman (BOR 90) - James Spithill (AUS)

Design director - Mike Drummond (NZL)

Boat construction co-manager - Tim Smyth (NZL)

Boat construction co-manager - Mark Turner (NZL)

The BOR 90

Boat Type: Trimaran of carbon composite construction

Where Built: Core Builders, Anacortes, WA, USA

Overall Length: 100-feet/30 meters

Waterline Length: 90-feet/27 meters

Beam: 90-feet/27 meters

BMW Oracle Racing 90.

Wing sail data.

Hull

Boat Type: Trimaran of carbon composite construction

Where Built: Core Builders, Anacortes, WA, USA

Overall Length: 100-feet/30 meters

Waterline Length: 90-feet/27 meters

Beam: 90-feet/27 meters

Wing

Height: 190 ft / 57 m (compared to 102 ft / 31 m span of a Boeing 747 wing and 143 ft / 43.5 m span of an Airbus 380 wing)

Chord: 8 to 30 ft / 4 to 14 m

Width: 2 to 6 ft / 0.5 to 2.0 m

Surface area: 6725 sq. ft / 625 sq. m

Weight: 7,700 lbs / 3 500 kg (approx)

Notes

The wing sail consists of two main components: the main element and the flap element. The main element is one single piece that rotates around the mast step. Eight individual flaps rotate around the trailing edge of the main element. Both elements are separated by a small gap and linked together by nine main hinges.

The wing is primarily constructed from carbon fibre and kevlar with a light, shrinkable aeronautical film material used as an overall skin over the frame. Nearly 40,000 man-hours of construction went into building it.

According to Joseph Ozanne, an aeronautical specialist with the BMW ORACLE Racing design team, the ability to trim the wing easily is one of its big advantages over a soft sail.

With a soft sail, it's so big, it's difficult to shape as you only have control over three points (head, tack, clew). You need massive tension to trim the soft sail," he says. "With a wing sail, you can get the shape you want much more easily."

The main trim parameters are: master wing rotation (similar to mast rotation on a conventional rig); master camber control (general rotation of the flap element); flap twist control (each flap can have a specific angle of rotation).

"On paper, it's a clear advantage over the soft sail," Ozanne says. "It's on such a different scale to what has been done before, it's hard not to have some uncertainty. But we are more and more confident... I think it's going to be a strong addition for us."

BOR 90 - Engineering at the Limit.

The BMW ORACLE Racing Team supported
by BMW EfficientDynamics.

Munich - For the 33rd America's Cup, the BMW ORACLE Racing team was charged with one of the most difficult design and engineering tasks in the long history of the event.

With the design rules wide open for this edition of the Cup, the team's mission was striking in its simplicity - build the fastest sail boat on the planet, the 'ultimate driving machine', to compete for sailing's most prestigious prize.

With expertise from BMW engineers and their competence in 'EfficientDynamics', the BMW ORACLE Racing team has come a long way towards doing just that.

„Lightweight engineering is one of the big skills we bring in to the design team,“ says Thomas Hahn, an aeronautical engineer with the BMW Group, who has worked with the sailing team since 2004. „We are trying to build a lighter and stiffer product that can stand up to the rigours of the race. It's all about efficiency. Producing power from the lightest platform possible is how we generate an advantage.“

What was already an immense challenge was made even more difficult by the 'moving target' aspect of this campaign. When the design team started work, it was building a boat for a venue that had yet to be determined. Without knowing the prevailing wind and wave conditions where the race would be held, the initial concept had to be a good 'all-rounder'; a boat that could then be fine-tuned to specific conditions.

In this light, the original design in 2007 can be compared to a rally car - strong, reliable, and able to handle anything the sea could throw at it. But since its launch in 2008, the BOR 90 has undergone three major modifications to refine the finished product. Every change has seen a massive performance gain.

The latest iteration to undergo sea trials in San Diego is now more like a Formula 1 speedster than a rally car. It's light, fast, and sporting an incredibly efficient power plant - the biggest wing sail ever to have been built.

„The America's Cup is an engineer's dream," says Christoph Erbelding, an aeronautical engineer who worked on the wing project. „What we are doing is unbelievable. Anything you can imagine, whatever you dream up, that's the type of thing we're working on.“

The knowledge from the BMW engineers isn't a one-way street. Hahn and Erbelding and their colleagues are also able to use their experience with the BMW ORACLE Racing team to improve their skill set which they'll eventually take back to BMW.

„This is the kind of engineering which is our core business at the BMW Research and Innovation Centre," Hahn says. "I've learned so much working on this project. But I think the biggest benefit is in having worked in a team of such knowledgeable guys who are experts in their area, on an extremely tight schedule.“

So tight were the deadlines that as soon as a design came off the computer, it was put into production - there wasn't any time to build prototypes to test. All the testing would be full-scale and real-time, which is unheard of in the automotive engineering field.

„In terms of how to get something done very fast, this was a big part of the project. In the automotive industry, there are areas where perhaps we could speed-up the development process. That's one of the biggest challenges in our industry - development times - and getting things to market quickly, and certainly, on this project, time was a very big factor.“

is in having worked in a team of such knowledgeable guys who are experts in their area, on an extremely tight schedule.“

So tight were the deadlines that as soon as a design came off the computer, it was put into production - there wasn't any time to build prototypes to test. All the testing would be full-scale and real-time, which is unheard of in the automotive engineering field.

„In terms of how to get something done very fast, this was a big part of the project. In the automotive industry, there are areas where perhaps we could speed-up the development process. That's one of the biggest challenges in our industry - development times - and getting things to market quickly, and certainly, on this project, time was a very big factor.“

Interview Mike Drummond.

The design director comments on the wing.

1. Q. Give us an idea of the scope and scale of the wing?

A. A wing of this scale has never been built for a boat. In terms of size, the wing on BOR 90 dwarfs those on modern aircraft. Towering nearly 190 ft (57 m) above the deck, it is 80 percent bigger than a wing on a 747 airplane (102 ft / 31 m). Our designers tell us the blades on the very biggest wind turbines come close in length although they are smaller in surface area. It's been a big project for entire design and build team and they've responded to the challenge.

2. Q. Differences between a wing and a soft sail: What are the advantages?

A. In general, both the soft sail and the wing provide a lifting surface that drives the boat forward. As the sail gets bigger, it becomes more and more difficult to maintain an optimum shape. You can only tension a triangular sail from three points, so as it gets bigger, it becomes harder to prevent the shape from distorting from the optimum. With a hard wing, you can control the shape to a very precise degree, which is a big advantage, and the shape doesn't distort. It is a much more efficient shape.

3. What are the disadvantages?

A. Sailing in strong winds will be a bit more challenging as unlike a soft sail where it is possible to reef, with a wing, the surface area can't be reduced, although it can be de-powered. The wing is heavier so it is a balance between the aerodynamic gains vs. the extra hull drag.

4. Q. What performance gains are you expecting with the wing?

A. On paper, it's a clear advantage over the performance with a soft sail. But something of this size has never been seen before, so while the models and predictions are all positive, the proof will come once it is sailing.

5. Does the wing operate on the same principles as airplane wings?

A. Many of the same principles apply including the use of flaps to provide power. It's a two element wing with one slot. The effect of the slot is to delay stall so it can produce higher lift than a single element wing.

6. Q: What is the advantage of a wing sail over traditional mast and soft sail?

A. One of the big attractions is that you can get much higher lift coefficients. Sailing upwind, this isn't usually important, because as soon as you're overpowered, you're not using maximum lift anymore anyway. But downwind it's certainly an advantage and upwind in lighter wind conditions it will be helpful too.

7. Q: What are the control mechanisms on the wing?

A. The control system uses cables running up the wing to 8 control arms with a single control to set the basic angle. The single cable allows the wing to tack automatically so the settings are duplicated on port and starboard.

Trimming the Wing.

Dirk de Ridder explains how his job has changed.

What has the addition of the wing meant to you as the mainsail trimmer?

The wing has changed my job quite a lot. The biggest difference for me is that the loading of the boat is completely different. You don't have any mainsheet loads anymore, that's disappeared. Now we just have a traveller load, and that is very low. That's a major difference. And of course, how we set the wing is much different.

How do you ,trim' the wing?

You rely much more on the instruments than on your eye. The first few days were difficult for me. I confused myself sometimes by thinking of it like a soft sail and it's not a soft sail. You have to get that out of your head and that took me a few days. You set the wing sail more to targets (numbers) and then play the twist and the traveller accordingly. You look at heel angle, rudder angle and boat-speed and don't look up at the sail itself too much, because it's very hard to judge how much twist and camber you have just by looking at it. You really rely on your instruments much more.

There are dozens of orange ,tell-tales' on the wing sail. Do you use them the same as you would with a traditional mainsail?

The tell-tales show you the air-flow over a sail or wing. The idea is the same, but you can't see through the wing, so I work closely with Joey Newton, who tells me whether we have connected flow on the leeward side or not. Especially downwind, he's my vision and he tells me how we're going.

What is the biggest challenge for you as a trimmer with the wing?

With the height of the rig, wind shear is a big factor and adjusting the wing sail for that is quite challenging. Making the right adjustments for the shear and getting tuned in is going to be something we work on right up until the race.

Does the boat behave differently with the wing sail?

It is much more manoeuvrable. For example, on our last day of sailing in San Diego, we sailed in the harbour on a busy holiday. There were a lot of boats around us. With a soft sail, you would never have contemplated doing that. But with the wing sail, you can stop so quickly and move the boat so easily, it's much safer.

BMW ORACLE Racing.

Design and construction team.

Design Team

Mike Drummond - Design Director

Ian Burns - Design Co-ordinator

VPLP - Naval Architecture, Hull Design, Configuration

Frank Albina - CFD Analyst, CFD Code Development

Paul Bieker – Structural Design and Engineering

Antoine Bonnaveau - Sail Vision, Sail Analysis

Kevin Borrows - Aero Analyst

Claudio Cairoli - CFD Analyst, Aerodynamics

Mario Caponnetto - CFD Analyst, Aerodynamic Analysis, Hydrodynamic Analysis

Eduardo Aldaz Carroll - Instrumentation Design, Project Coordinator

Dimitri Despierres - Mechanical Design, Modelling and Appendage Engineering

Herve Devaux - Lead Structural Designer

Javier Cuevas Domingo - Instrumentation Development, Software Development

Christoph Erbeling - Rig Structures, Rig Analysis

Scott Ferguson - Lead Rig Designer

Thomas Gaveriaux - Platform Structures, Project Management

Andrew Gaynor - Rig Engineering, Analysis and Rig Modelling

Thomas Hahn – Structural Design, Structural Analysis, Engineering

Robert Hook - Lead Sail Designer, Aero Design

Dave Hubbard - Aerodynamic Consultant

Francis Hueber - CFD Analyst, Aerodynamics, Hydrodynamics

Eric Jolley - Modelling, Lofting, Drafting

Michel Kermarec - Lead Appendage Designer, VPP Development, Configuration and Performance Prediction

Asim Khan - Data Systems Coordinator, Data Analysis

Richard Korpus - Aero CFD Analyst, Aerodynamic Analysis

Juan Meseguer - Sail Designer, Sail Analyst

Aurelien Miller - Structural Design , Structural Analysis

Joseph Ozanne – Wing Design Project Leader

Jose Luis Vela Perez - Instrumentation Development, Software Development

Francesco Binetti Pozzi – Engine project leader - Hydraulic Systems Engineer/Winches

Steven Robert - Structures Design, Structures Analysis, Composite Design

Manolo Ruiz de Elvira - Naval Architecture, Appendage Design, CFD

Eduardo Sanchez - Modelling, Design, and Drafting

Tom Speer - Aerodynamic Consultant

Chris Todter - Performance Analysis, Electronic Design, Instrumentation

Thiha Win - Mechanical Design and Modelling

Boat construction team

Michel Marie - Technical Director

Mark Turner/Tim Smyth – Construction Managers



Michael Drummond.

Design director.

Date of birth: September 3, 1962

Nationality: New Zealand

Position: Design Director

Mike Drummond has over 20 years America's Cup experience as a design engineer, principal designer and navigator. He has been a part of three America's Cup winning teams and is BMW ORACLE Racing's Design Coordinator for this challenge.

Mike's role as Design Director is to consider all elements of the design of the yacht and coordinate the various departments ensuring that the project progresses on time and to the highest level.

The America's Cup has long been recognised as a design and technological competition and in this respect a key element of winning the trophy is designing and building a structurally sound and innovative yacht.

Main achievements:

2007 - America's Cup, Team Alinghi

1987, 1988, 1992, 1995, 2000 and 2003 - America's Cup, Team New Zealand



Ian Burns.

Design coordinator.

Date of birth: July 21, 1960

Nationality: Australian

Position: Design Team Coordinator

Now working on his seventh America's Cup campaign, Ian 'Fresh' Burns first worked on the Australian defence of the Cup for the Kookaburra team. He holds a Bachelor degree in Mechanical Engineering, and sailed as a navigator in his first four Cups.

But beginning with ORACLE Racing in Auckland, he switched to working on the design side of the campaign, rising to the position of Design Team coordinator

Career Highlights:

2003-2007 - BMW ORACLE Racing, Design Team Coordinator

2000 - America's Cup with Abracadabra, navigator

1998 - Winner, Maxi Worlds, on Sayonara

1995 - America's Cup, OneAustralia, navigator

1992 - America's Cup, Spirit of Australia

1988 - 12 Metre World Champion

1987 - America's Cup, Kookaburra



VPLP.

Naval architects.

The leading French multihull design firm of Van Peteghem Lauriot Prévost (VPLP) is working with BMW ORACLE Racing's design team in developing the trimaran. Firm principals Lauriot Prévost and Van Peteghem are integrated with the BMW ORACLE Racing's core design team for the project. VPLP are the lead designers in conjunction with the BMW ORACLE Racing design team.

Vincent Lauriot Prévost and Marc Van Peteghem met at the Southampton College of Higher Education, in the Yacht and Boat Design Section. They created the VPLP office soon after, in 1983.

Today, as they celebrate their 25th anniversary, VPLP is the world's leading multihull design agency. VPLP are the only naval architects to specialize in all four sectors of the multihull market: racing, cruising, luxury custom design and power boats.

VPLP's list of achievements is simply huge, with victories in almost all offshore multihull regattas as well as speed records. VPLP are also involved in special projects such as l'Hydroptère, Groupama 3, and recently launched Maxi Banque Populaire V - at 131' / 40m the largest trimaran ever launched.

Main achievements:

Victories in most offshore multihull regattas: Route du Rhum, Transat Jacques Vabre, OSTAR, Jules Verne Trophy

Numerous speed records

VPLP is also involved in special projects such as l'Hydroptère, Groupama 3, Maxi Banque Populaire V, and many more.



Paul Bieker. Engineering.

Date of birth: October 26, 1962

Nationality: USA

Position: Engineering

After receiving his Naval Architecture degree from UC Berkeley in the late 80's and completing a short period of work with Gary Mull in the Bay area, Paul Bieker worked in commercial naval architecture firms. He learned to sail International 14's and started to design and build them as an amateur.

This work developed into designing and building the boats for a living, giving him hands-on knowledge of high performance composites and an understanding of the boat building process. It was his reputation with International 14's which led BMW ORACLE Racing to call him in to work on the structure of the 2003 America's Cup yachts.

Main achievements:

2007 - America's Cup BMW ORACLE Racing

2003 - America's Cup Oracle BMW Racing

Designer International 14'



Dimitri Despierres.

Wing engineering leader.

Date of birth: January 27, 1974

Nationality: France

Position: Mechanical Engineering

Dimitri worked on the design and production of appendages, mechanical systems and deck layout with the team for the 32nd America's Cup.

On the BOR 90, his main responsibilities have been overseeing key projects with regard to manufacturing modelling and implementation.

Main achievements:

2007 - America's Cup with BMW ORACLE Racing team

2003 - America's Cup with Le Defi AREVA

2000 - America's Cup with Le Defi Bouygues Telecom



Christoph Erbelding.

Rig designer.

Date of birth: December 6, 1968

Nationality: Germany

Position: Rig Structural Design, FEA and Engineering

As an expert in lightweight construction and structure optimisation, Christoph Erbelding can fall back on a broad-based knowledge from the fields of linear and non-linear computer-aided structure analysis. He has been able to expand this knowledge in a diverse range of engineering areas (e.g. aerospace, automobile and consumer goods industries) and is now combining this experience with the basis of a solid training as an aerospace engineer. A good understanding of coordination and management requirements in international projects completes this know-how. In his spare time he can be found sailing, climbing, skiing or mountain biking in the mountains.

Main achievements:

2004 - today: BMW ORACLE Racing.

2001 - BMW Group/ Munich.

Responsible for crash and pedestrian protection functions in BMW's new Mini Cooper project.

1995 – 2001

Structure optimisation consultant in the automobile and consumer goods industry.

Development of new computer model for passenger simulation during vehicle crashes.

Further development of pre/post-processors for finite element methods.

Cooperation on European Space Lab programme as student.



Scott Ferguson.

Rig design manager.

Date of birth: July 1, 1961

Nationality: USA

Position: Spar Design, Engineering & Analysis, Project Manager

Scott Ferguson specialises in the design and engineering of composite spars for racing boats. After his graduation in Naval Architecture and Marine Engineering at the University of Michigan in 1985, Scott had various experiences in the field of yacht design, notably with Pedrick Yacht Designs for the America's Cup (92 & 95).

Scott was then recruited as rig research and development manager at Hall Spars consulting with the Young America campaign before starting his own company Scott Ferguson LLC.

He has since provided services for many designers, builders, and grand prix projects worldwide. Notably the Prada and Luna Rossa campaigns, ABN AMRO and Pirates for the 05/06 Volvo Race, and Equipo Telefonica for the 2008 Volvo Ocean Race. He has been designing TP52 rigs since the class was conceived including the 2008 TP52 MedCup circuit winner Quantum.

Main achievements:

2008 - Volvo Ocean Race, Equipo Telefonica

2007 - America's Cup, Luna Rossa Challenge

2005 - Volvo Ocean Race, ABN AMRO, Pirates of the Caribbean

2003 - America's Cup, Prada



Thomas Gaveriaux.

Engineering and coordination.

Date of birth: December 5, 1974

Nationality: France

Position: Multihull Project Coordinator

Thomas is the project coordinator for the multihull project. This project is running an extremely tight time line with a large design team working on various elements of the boats structure and rigging. The boat is being designed to extremely tight tolerances and right on the edge of the design limits to ensure a finished product that is as light and as strong as possible.

Thomas is a structural composites engineer with a vast experience of managing yacht design projects. His technical background and superior project management skills help him coordinate the design and build teams with heavy involvement in the design process and signing off on key design decisions.

Main achievements:

Sodebo Project – Maxi trimaran



Andrew Gaynor. Wing modelling.

Date of birth: January 22, 1975

Nationality: USA

Position: Rig Engineering, Analysis and Rig modelling

Andrew is responsible for Wing, Mast modelling, Engineering and Drafting.

Main achievements:

2008 - Equipo Telefonica

2007 - America's Cup, Luna Rossa



HDS. Structural design.

HDS specializes in structural design. The company's founder and manager, Hervé Devaux, has been involved in competitive sailing for decades and his expertise is recognised all over the world.

HDS has notably been involved in ABN Amro One, the Juan Kouyoumdjian design that won the last Volvo Ocean Race, as well as on eight America's Cup campaigns.

HDS also designs motorboats, like Olivier de Kersauzon's Ocean Alchemist, as well as big catamarans for passengers transport and has recently been involved in the aeronautic industry, designing eight metre carbon fibre spheres for Thales.

HDS has been involved in the design of multihulls rigs and platform since the birth of racing multihulls, including the maxi boats Orange 2 and IDEC (fastest sailing boats around the world, resp. with crew and single handed), as well as Groupama 3 and Banque Populaire V, and many Transat winning 60' trimarans (Groupama2, Gitana XI, Géant).



Thomas Hahn.

Structural design.

Date of birth: March 6, 1966

Nationality: Germany

Position: Structural Design /FEA and Engineering

Thomas Hahn is an expert in the fields of structural lightweight construction and applied mechanics. As well as his specialist areas in computer-aided structure optimisation and linear and non-linear structure analysis, he also has experience of various engineering fields such as civil engineering, aerospace engineering and offshore platforms. His tasks at BMW mean he can fall back on a well-founded knowledge of production, coordination and project management. As a passionate fan of vintage cars, he enjoys driving classic yachts and automobiles in his spare time.

Main achievements:

2004 - Joined BMW ORACLE Racing

1997 - BMW Group/ Munich

Development of new BMW 5 Series: Responsible for Structural and acoustic engineering of the Body in White – Structure

Development of Prototype Cars using Carbon Fibre for the Chassis

Development of the M3 CSL carbon-fibre roof

Development of New MINI: Responsible for all aspects of Body-in-White

(Chassis) in terms of stiffness, crashworthiness, design and manufacturability

1992 – 1997

Consultant/ Structural Analyst in different areas:

Automotive (structural engineering for Mercedes Benz cars),

Civil Engineering (earthquake resistance of buildings)



Ross Halcrow.

Head of sail program.

Date of Birth: November 17, 1966

Nationality: New Zealand

Position: Head of Sail program and trimmer

“Rosco” is considered one of the world’s best sail trimmers and has won both the America’s Cup and Volvo Ocean Race. He was part of Team New Zealand’s America’s Cup winning team in 1995 and the victorious illbruck Challenge in the 2001-2002 round-the-world race. He is a six-time World Champion and is in his fifth America’s Cup campaign.

Career Highlights:

2007 - TP 52 Global Champion, Artemis
2007 - America’s Cup, BMW ORACLE Racing
2002 - Winner, Volvo Ocean Race, illbruck Challenge
2000 - America’s Cup, Young America
1995 - Winner, America’s Cup, Team New Zealand
1992 - America’s Cup, New Zealand Challenge



Robert Hook.

Head sail designer.

Date of Birth: July 2, 1963

Nationality: Australia

Position: Sail Designer

Robert Hook is a hugely experienced sail designer, having been involved in every America's Cup since his debut in 1987 with the Australian campaign Kookaburra.

Hook worked with Emirates Team New Zealand during the last America's Cup. He also designed sails for round-the-world winners EF Language and illbruck.

Career Highlights:

2007 - America's Cup, Emirates Team New Zealand

2003 - America's Cup, One World Challenge

2002 - Volvo Ocean Race, illbruck

2000 - America's Cup, AmericaOne

1998 - Whitbread Race, EF Language

1995 - America's Cup, OneAustralia



Dave Hubbard.

Wing consultant.

Date of Birth: August 1, 1929

Nationality: USA

Position: Wing Consultant

Dave Hubbard is a pioneer of wing sail development and designed the 'C' class catamaran SeaLi-on in 1963. Two years later, he developed the first slotted full airfoil airplane style wing for a sail boat and won the Little America's Cup four times with various evolutions of that original design.

He has also been involved in the development and design of wings for the unmanned sailing vessels for surveillance and patrol missions for the US Navy.

Career Highlights:

Four time winner - Little America's Cup
1988 - Designer of wing for Stars & Stripes



Michel Kermarec.

VPP, appendages and hydro design.

Date of birth: June 20, 1958

Nationality: France

Position: Appendages Design and Velocity Prediction Program

In 1992, Michel Kermarec was part of a research group working on unsteady flows around helicopter blades in France. At that time, he was also sailing a lot in IOR boats (Admiral's Cup '91). When Marc Pajot started his campaign for the 1995 Cup in San Diego, he asked Michel to join his team, with responsibility for computation on sails, and sails co-designer. Michel then got involved with the French syndicate 6ème Sens in 2000, and Prada in 2003.

Michel Kermarec is also a keen sailor himself, having participated in the 1988 Olympic Games in the Soling Class and he has spent a lot of time on 60' multihulls.

Main achievements:

- 2007 - America's Cup, BMW ORACLE Racing
- 2003 - America's Cup, Prada (in charge of Velocity Prediction Program)
- 2000 - America's Cup, 6ème Sens (French challenge)
- 1996-2004 - Races in 60' multihulls
- 1996 - Tour de France a la Voile (1st with Région Aquitaine)
- 1995 - France 2- France 3 (French syndicate in San Diego)
- 1991 - Admiral's Cup with Corum winning team (helmsman of the Two Tonner)
- 1988 - Olympic Games in Soling (6th)



Michel Marie.

Technical director.

Date of birth: December 30, 1963

Nationality: France

Position: Project manager

Michel Marie has been involved in the construction of high tech racing yachts for decades. He started modestly, with Minis, but became very soon involved in bigger projects such as Mari Cha III, La Poste, and Merit among others. Michel has been building America's Cup yachts since 1992 and he is one of the best specialists in this field.

Main achievements:

- 2007 - America's Cup (Team Alinghi)
- 2003 - America's Cup (Team Alinghi)
- 2000 - America's Cup (Yaka Design Team)
- 1995 - America's Cup (Harmonie)
- 1992 - America's Cup (Ville de Paris)
- 1989-1990 - Whitbread race on board Rucanor Sport
- 1987 - Mini transat (designer, builder & competitor)
- 1985 - Mini transat (designer, builder & competitor)



Joseph Ozanne.

Wing design project leader.

Date of birth: January 13, 1979

Nationality: France

Position: Wing Design Project Leader

This is the second America's Cup for Joseph, who joined the BMW ORACLE Racing team in Valencia for the 32nd America's Cup.

Before the America's Cup, he worked with the design team for the ABN AMRO Volvo Ocean Race campaign, which went on to win the 2005-06 edition of the race.

His other projects have included ORMA 60 trimarans, Open 60 monohulls, in close collaboration with VPLP, as well as IMS and IRC boats, in a performance related, design role.

An amateur sailor, Joseph is an Aeronautical Engineer, with a degree from the French engineering school SUPAERO, in Toulouse.

Main achievements:

2007-Present - BMW ORACLE Racing Team

2004-2007 - BMW ORACLE Racing Team

2004 - ABN AMRO, early consulting with design team



Francesco Binetti Pozzi.

Engine project leader - hydraulic systems engineer/winches.

Date of birth: August 22, 1967

Nationality: Italian

Position: Engine project leader - Hydraulic Systems Engineer/Winches

Francesco started working in the marine industry as soon as he finished engineering school at the University of Milan. This is his fourth America's Cup.

As a sailor he has won three national championships in Italy - two Moth Europa titles and one IMS championship.

Career Highlights:

2007 – BMW ORACLE Racing Hydraulic system and winch design

2003 – Winch designer Harken (dedicated to Alinghi)

2000 – Hydraulic designer for Cariboni (worked with Prada)



Steven Robert.

Wing composite designer.

Date of birth: March 28, 1979

Nationality: FRA

Position: Composite Engineering

A structural composite engineer who graduated in 2002, Steven joined BMW ORACLE Racing in the summer of 2007. Previously he was working with the HDS design office in Brest on various sailing projects.

He's worked on design and engineering of the mast and appendages on the BOR 90 and on the composites side of the wing project.

Main achievements:

Groupama 3 - FEA engineering of platform and mast

Banque Populaire V - FEA engineering/platform/mast/appendages



Tim Smyth.

Construction manager.

Date of birth: February 14, 1959

Nationality: New Zealand

Postion: Co-Construction Manager

Tim Smyth has been involved in the yacht racing scene throughout his life, both as a competitor and boat builder. A member of the Construction team for the 1992 Spanish America's Cup Challenge in San Diego, he was responsible for the construction of the boat's deck and fit out.

He then built several prestigious boats such as Galicia Pescanova (Whitbread Race 1994), the 1995 Spanish Americas Cup Challenger Rioja España, EF Challenge (Whitbread Race 1997), Bravo España (AC 2000) or Team SEB (VOR).

Tim Smyth joined Oracle Racing for the 2003 America's Cup, and has been involved in all the team's boat construction ever since.

Main achievements:

- 2001 – Present - Co-managing the build of BMW Oracle Racing's racing yachts
- 2000 – 2001 - Co-management of construction of Team SEB (VOR)
- 1998 – 2000 - Co-management of the construction of Bravo España (ACC)
- 1996 – 1998 - Co-management of the construction of EF Challenge
- 1995 – 1996 - Co-management of the construction of Rioja España (ACC)
- 1993 – 1995 - Co-management of the construction of Galicia Pescanova
- 1989 – 1993 - Member of the Construction team for the 1992 Spanish Americas Cup Challenge in San Diego.



Tom Speer. Aerodynamic consultant.

Date of birth: March 26, 1953

Nationality: USA

Position: Aerodynamic Consultant

Tom has worked with Boeing Research and Technology as a flight control engineer for 14 years.

With a background in Aerodynamics – he worked on Rigid Wing Land Yacht as a hobby – it was a sailing technology testbed – BMW ORACLE Racing is his first involvement with a professional sailing team.

He has also worked with the US Air Force as flight test engineer.

Main achievements:

2001 - Boeing Associate Technical Fellow

1992 - Landyacht Design Interchange Association project



Mark Turner.

Construction manager.

Date of birth: September 12, 1960

Nationality: New Zealand

Position: Co-construction manager

Mark Turner started sailing at the age of seven; he built his first boat (a quarter tonner) when he was fifteen years old. Turner apprenticed as a boat builder with Brin Wilson Boat Builders before joining Cookson Boats as a boat builder between 1987 and 1995.

Turner then got involved in the construction of a large number of top level race yachts such as Team New Zealand's IACC, Yamaha and Tokyo VOR 60's. He joined New Zealand Challenge in 1990 as project manager for the extensive appendage program in the new IACC. Other Cup campaigns include Tag Heuer (1995), Toshiba/Team Dennis Conner (Whitbread), Sayonara and Team New Zealand (2000 campaign).

Turner joined Oracle Racing in 2000 and has been managing the construction alongside Tim Smyth for all the team's America's Cup boats including USA 71, USA 76, USA 87, USA 98 and the BMW ORACLE Racing 90.

Main achievements:

2000-Present - BMW ORACLE Racing Boat Construction Manager
1997-2000 - Team New Zealand, shore team / boat builder
1995 - Tag Heuer (ACC), shore team / boat builder / project manager
1990-1992 - New Zealand Challenge, project manager
1989-1995 - Cookson Boats (Auckland)



Thiha Win.

Control system leader.

Date of birth: May 4, 1967

Nationality: British

Position: Design Engineer - Systems/controls

'Winnie' joined the team in 2007, from Luna Rossa Challenge. His background in high technology engineering led to an early career with race car teams before the America's Cup.

He is responsible for most of the systems on the BOR 90, including the steering/rudders, dagger-board, trim tab gearbox, adjustable battens on the soft sails, etc.

On the wing project, Winnie designed the control systems for the wing.

Career Highlights:

2007 - America's Cup, Luna Rossa Challenge

BMW ORACLE Racing. Sailing team.

Russell Coutts

Simone de Mari

Dirk de Ridder

Noel Drennan

Larry Ellison

Shannon Falcone

Thierry Fouchier

Ross Halcrow

John Kostecki

Joe Newton

Matteo Plazzi

Max Sirena

James Spithill

Simeon Tienpont

Brad Webb



Russell Coutts.

Date of Birth: 1 March 1962

Nationality: New Zealand

Position: CEO

Russell has won the America's Cup as a skipper three times. In 1995 and again in 2000, he won with Team New Zealand, and in 2003 as skipper of Alinghi. He is undefeated in the America's Cup and holds the record for most consecutive America's Cup match race wins (14) of any skipper. His sailing record includes a Gold Medal in the 1984 Olympics, representing New Zealand in the Finn class. He is also co-designer of the popular RC 44 boat. Other career highlights include winning the ISAF World Youth Championships, three World Match Racing Championships, and numerous IOR, IMS and One Design World Championship titles. In New Zealand he has been honoured with a Commander of the British Empire and the Distinguished Companion of New Zealand Order of Merit and has twice been the International Yacht Racing Union's World Sailor of the Year.

Career Highlights:

- 2008 - Winner, RC 44 Championship Tour, tactician, Banco Espirito Santo
- 2008 - Winner TP 52 City of Marseille Trophy, USA-17
- 2007 - Winner, TP 52 Global Championship, Artemis
- 2005 - Co-designer of the RC 44
- 2003 - Winner, America's Cup, Team Alinghi
- 2000 and 2006 - Winner, Farr 40 World Championship
- 2000 - Winner, America's Cup, Team New Zealand
- 1995 - Winner, America's Cup, Team New Zealand
- 1993 - Winner, Admiral's Cup
- 1992, 1993 and 1996 - Match Race World Champion
- 1984 - Gold Medallist, Olympic Games, Los Angeles, Finn



Simone de Mari.

Date of Birth: 5 June 1973

Nationality: Italy

Position: Pit

Simone started racing in 1993 on the Italian offshore circuit. Since 1999, he has competed on the international match racing circuit and until now been involved in every America's Cup since 2000 with Prada/Luna Rossa.

Career Highlights:

2007 - America's Cup, Luna Rossa

2003 - America's Cup, Prada Challenge

2000 - America's Cup, Prada Challenge



Dirk de Ridder.

Date of Birth: 29 December 1972

Nationality: The Netherlands

Position: Mainsail Trimmer

“Cheese” has extensive round-the-world race and America’s Cup experience. He won the 2001-2002 Volvo Ocean Race on board illbruck and finished second with Merit Cup in the 1997-98 Whitbread Race. In between round-the-world races he has been part of America’s Cup efforts - in 2000 with AmericaOne and with BMW ORACLE Racing in 2007. He placed fourth in the Soling Class at the Sydney Olympic Games. Recent successes with the TP52 Mean Machine include winning the 2006 Med Cup.

Career Highlights:

2006 - Volvo Ocean Race, Pirates of the Caribbean, 2nd
2003-2005 - America’s Cup, BMW ORACLE Racing
2002 - Winner, Volvo Ocean Race, illbruck Challenge
2000 - Olympics, Sydney, 4th in Soling Class
1998 - Second, Whitbread Round the World Race, Merit Cup



Noel Drennan.

Date of Birth: 18 November 1960

Nationality: Ireland

Position: Mainsail Trimmer

“Nitro” has both America’s Cup and round-the-world racing experience. Now in his fourth America’s Cup campaign, he is a winner of the 2001-2002 Volvo Ocean Race with the illbruck Challenge. Past Cup campaigns include Dennis Conner’s Stars & Stripes in 2000 and 2003 and BMW ORACLE Racing in 2007. He has also competed in 22 Sydney-Hobart Races earning two overall wins and two line honor titles.

Career Highlights

2007 - America’s Cup, BMW ORACLE Racing

2006 - Maxi World Champion, Alfa Romeo

2003 - America’s Cup, Stars & Stripes

2002 - Winner, Volvo Ocean Race, illbruck Challenge

2000 - America’s Cup, Stars & Stripes



Larry Ellison.

Date of Birth: 17 August 1944

Nationality: USA

Position: Afterguard

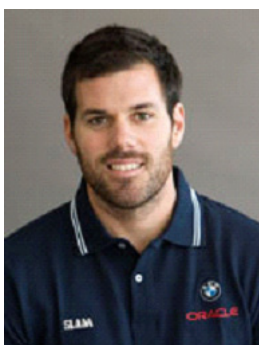
The founder of BMW ORACLE Racing is a five-time Maxi World Champion with the Sayonara racing program. A Louis Vuitton Cup Finalist in 2003 with Oracle BMW Racing, Larry won the Owner-Driver Series of the Moët Cup in 2003 and the UBS Trophy in 2004.

Career Highlights:

Winner 2004 UBS Trophy

Winner 2003 Moët Cup

Finalist, Louis Vuitton Cup 2003



Shannon Falcone.

Date of Birth: 28 June 1981

Nationality: Antigua

Position: Mast

Shannon's first footsteps as a child were on his father's 44' Caccia alla Volpe. In 1984, at the age of three, he set sail with his family from Livorno, Italy, on a transatlantic race to Guadeloupe. Since then, English Harbour, Antigua has been home to the Falcones. At 19, Shannon ventured off into the Atlantic and Pacific, with six oceanic deliveries and one world circumnavigation. He then moved onto racing, competing in regattas around the world including the Rolex Maxi World Championships. In 2000, he joined Mascalzone Latino for his first America's Cup campaign. He then joined Luna Rossa's 2007 Cup campaign. In 2008-09 he sailed with PUMA to a second place finish in the Volvo Ocean Race.

Career Highlights:

2008-2009 - Volvo Ocean Race, PUMA, 2nd
2007 - America's Cup, Luna Rossa Challenge
2003 - America's Cup, Mascalzone Latino



Thierry Fouchier.

Date of Birth: 14 March 1966

Nationality: French

Position: Trimmer

Thierry discovered multihull sailing in 2002 after competing successfully in match racing and taking part in several Tour de France à la Voile events. He sailed for two seasons alongside Karine Fauconnier, before joining the team Groupama in 2003. He is a talented jib trimmer.

Thierry also took part in the 2000 America's Cup on board Le Défi and in 2007 with the Swedish entry Victory Challenge.

Career Highlights:

2007 - America's Cup with Victory Challenge

2001 - Winner of the Swedish Match Tour (match racing)

2000 - America's Cup with Team 6°sens

1991 - Winner of the Admiral's Cup (Corum Sailing Team)



John Kostecki.

Date of Birth: 7 June 1964

Nationality: USA

Position: Tactician

Winner of the 2001-02 Volvo Ocean Race as skipper of the illbruck Challenge, “JK” is also a 1988 Olympic silver medalist in the Soling Class. In his fifth America’s Cup campaign, JK was part of the Ericsson Racing Team in the 2005-2006 edition of the round-the-world race, as inshore race tactician. A 10-time world champion in a range of one-design classes, he recently has been competing on the MedCup TP 52 circuit.

Career Highlights:

2005-2006 - Volvo Ocean Race, Ericsson Racing Team
2003-2005 - America’s Cup, BMW ORACLE Racing
2002 - Winner, Volvo Ocean Race, illbruck Challenge
2000 - America’s Cup, 2000 AmericaOne
1995 - America’s Cup, 1995, Young America
1991 - America’s Cup, America 3
1988, 1986 - Soling World Champion
1988 - Silver Medallist, Olympics, Soling
1997-1998 - Whitbread Round the World Race, Chessie Racing



Joe Newton.

Date of Birth: 16 December 1977

Nationality: Australia

Position: Trimmer

Now in his fourth Cup campaign, Joe got his America's Cup start with James Spithill as part of the Young Australia team in 2000. In 2001, he won the Fastnet and the Round Island Race on-board Maxi Stealth. In 2005, with James Spithill, he won the Match Racing World Championship and the Bermuda Gold Cup.

Career Highlights:

2007 - America's Cup, Luna Rossa
2005 - World Match Race Champion
2003 - America's Cup, OneWorld
2001 - Winner Fastnet Race, Stealth
2000 - America's Cup, Young Australia



Matteo Plazzi.

Date of Birth: 14 November 1960

Nationality: Italy

Position: Navigator

Three-time navigator for the Italian Luna Rossa Challenge, Matteo first competed for the Cup with Italy's Azzurra challenge in 1987. He competed in the 1993 - 1994 Whitbread Round the World Race aboard Winston. He won the Kenwood Cup in 1992, the 1995 Admiral's Cup on Brava and has seven World titles - two One Ton, two ILC40, two Maxi and a 12 Metre. He has been a promoter of the Trofeo Trombini, a Grade 1 match race held in his hometown of Ravenna.

Career Highlights:

2007 - America's Cup, Luna Rossa Challenge

2003 - America's Cup, Prada Challenge

2000 - America's Cup, Prada Challenge



Max Sirena.

Date of Birth: 4 December 1971

Nationality: Italy

Position: Foredeck

In his fourth America's Cup campaign, Massimiliano "Max" was three-times with the Luna Rossa Challenge. Since 1998 he has competed in the main events of the international offshore and match-racing circuit. In 2005, with Francesco Bruni, he won the Italian Match Racing Championship. Max is 2007 TP 52 Global Champion and Med Cup winner.

Career Highlights:

- 2007 - Winner, TP 52 Global Championships, Artemis
- 2007 - America's Cup, Luna Rossa Challenge
- 2003 - America's Cup, Prada Challenge
- 2000 - America's Cup, Prada Challenge



James Spithill.

Date of Birth: 28 June 1979

Nationality: Australia

Position: Helmsman

Born in Sydney, James became the youngest America's Cup helmsman with Young Australia in 2000. After winning World and National Youth Match Racing Championships in 1998, he finished third at the Sydney-Hobart and won the Kenwood Cup. In 2000, he was second in the Sydney-Hobart. He ranked second in the 2002 - 2003 Swedish Match Tour and won the Nations' Cup in 2003, 2004 and 2005. In 2005, he won the World Match Racing Championship, the Melges 24 World Championship, and the Bermuda Gold Cup.

Career Highlights:

2009 - International A-Class World Championships, 6th
2007 - America's Cup, Luna Rossa Challenge
2005 - Winner, World Match Racing Championship
2005 - Winner, Melges 24 World Championship
2003 - America's Cup, OneWorld
2000 - America's Cup, Young Australia



Simeon Tienpont.

Date of Birth: 20 January 1982

Nationality: The Netherlands

Position: Bowman

With the experience of a Volvo Ocean Race behind him, the Dutch sailor is the team's only America's Cup first-timer. Simeon was also part of the record-holding 24-hour monohull run achieved by the ABN Amro 2 crew in the 2005-2006 round-the-world race. From a shipbuilding family, he has studied the design and construction of boats at university.

Career Highlights:

2009 - Extreme 40 circuit with Gitana

2008 - Extreme 40 circuit with VOR and BMW ORACLE Racing

2008 - MedCup circuit with Mean Machine

2005-2006 - Volvo Ocean Race, ABN Amro 2, 4th place and 24-hour speed record holder



Brad Webb.

Date of Birth: 30 September 1974

Nationality: New Zealand

Position: Foredeck

In his third campaign with BMW ORACLE Racing, Brad has competed in over 140 events across 16 countries in the past 12 years. His victories include 2004 World Match Race Champion and 2002 Swedish Match Tour Champion, as well as a variety of fleet and match racing titles from around the globe.

Career Highlights:

2007 - America's Cup, BMW ORACLE Racing
2004 - World Match Racing Champion
2003 - America's Cup, BMW ORACLE Racing
2002 - Swedish Match Tour Champion